



# Sun Ultra™ 20 Workstation Getting Started Guide

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Sun Microsystems, Inc.  
[www.sun.com](http://www.sun.com)

Part No. 819-2148-12  
April 2006, Revision A

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Adobe PostScript

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# Preface

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The *Sun Ultra 20 Workstation Getting Started Guide* provides the information that you need to set up, power on, and configure the workstation hardware and software.

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## How This Book Is Organized

This guide is organized into the following chapters:

[Chapter 1](#) contains instructions on unpacking, cabling, and powering on the workstation.

[Chapter 2](#) describes the operating systems supported by the Sun Ultra 20 Workstation and the supplemental drivers included with the system.

[Chapter 3](#) explains how to set up the preinstalled Solaris™ 10 Operating System and additional development software.

[Appendix A](#) explains how to use the Remote Installation Service (RIS) to create a Windows XP CD image containing Sun Ultra 20 Workstation drivers.

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# Shell Prompts

Shell	Prompt
C shell	<i>machine-name%</i>
C shell superuser	<i>machine-name#</i>
Bourne shell and Korn shell	\$
Bourne shell and Korn shell superuser	#

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# Typographic Conventions

Typeface*	Meaning	Examples
AaBbCc123	The names of commands, files, and directories; on-screen computer output	Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. % You have mail.
<b>AaBbCc123</b>	What you type, when contrasted with on-screen computer output	% <b>su</b> Password:
<i>AaBbCc123</i>	Book titles, new words or terms, words to be emphasized. Replace command-line variables with real names or values.	Read Chapter 6 in the <i>User's Guide</i> . These are called <i>class</i> options. You <i>must</i> be superuser to do this. To delete a file, type <code>rm filename</code> .

\* The settings on your browser might differ from these settings.



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## Related Documentation

The document set for the Sun Ultra 20 Workstation is described in the *Where To Find Documentation* sheet that is packed with your system, and all documents are posted at the product's documentation site. See the following URL:

[http://www.sun.com/products-n-solutions/hardware/docs/Workstation\\_Products/Workstations/ultra\\_20/index.html](http://www.sun.com/products-n-solutions/hardware/docs/Workstation_Products/Workstations/ultra_20/index.html)

Translated versions of some of these documents are available at the product's documentation site in Simplified Chinese, Traditional Chinese, French, German, Italian, Japanese, Korean, Russian, Spanish, and Swedish.

English documentation is revised more frequently and might be more up-to-date than the translated documentation.

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## Documentation, Warranty, Support, and Training URLs

Sun Function	URL	Description
Hardware Documentation	<a href="http://www.sun.com/documentation">http://www.sun.com/documentation</a>	Sun hardware documentation
Software Documentation	<a href="http://docs.sun.com">http://docs.sun.com</a>	Solaris and other software documentation
Warranty	<a href="http://www.sun.com/service/support/warranty/index.html">http://www.sun.com/service/support/warranty/index.html</a>	View specific details regarding your warranty
Support	<a href="http://www.sun.com/support/">http://www.sun.com/support/</a>	Obtain technical support, including patches
Training	<a href="http://www.sun.com/training/">http://www.sun.com/training/</a>	Learn about Sun courses and educational offerings

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Please include the title and part number of your document with your feedback: *Sun Ultra 20 Workstation Getting Started Guide*, 819-2148-12.

# Setting Up the Sun Ultra 20 Workstation

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This chapter includes information about the following topics:

- Section 1.1, “Safety Information” on page 1-1
- Section 1.2, “Planning the Installation” on page 1-2
- Section 1.3, “Unpacking the Workstation” on page 1-3
- Section 1.4, “Cabling the Workstation” on page 1-6
- Section 1.5, “Powering On the Workstation” on page 1-8
- Section 1.6, “Powering Off the Workstation” on page 1-9

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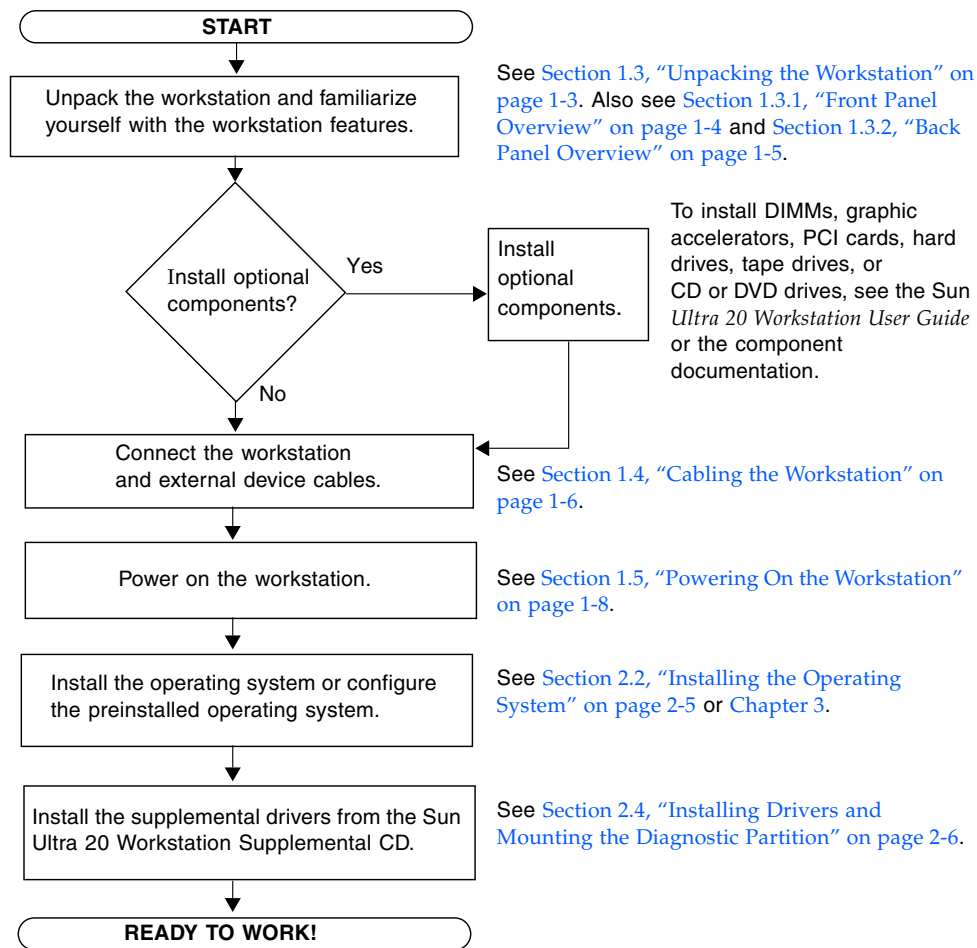
## 1.1 Safety Information

Refer to the following document for safety information regarding the Sun Ultra 20 Workstation:

- *Important Safety Information for Sun Hardware Systems*, 816-7190-xx (a hard-copy document is included in the Sun Ultra 20 Workstation ship kit).
- *Sun Ultra 20 Workstation Safety and Compliance Guide*, 819-2149-xx (available at <http://sun.com/documentation>).

## 1.2 Planning the Installation

Use the following flowchart as a process tool to assist you with installation of the Sun Ultra 20 Workstation.



**FIGURE 1-1** Flowchart for Installing the Sun Ultra 20 Workstation

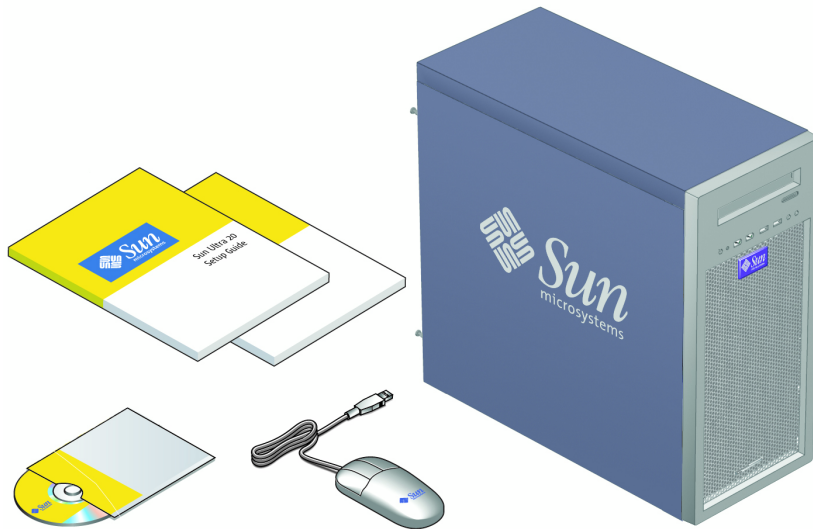
---

## 1.3 Unpacking the Workstation

Carefully unpack all workstation components from the packing cartons. The following items are contained in the package.

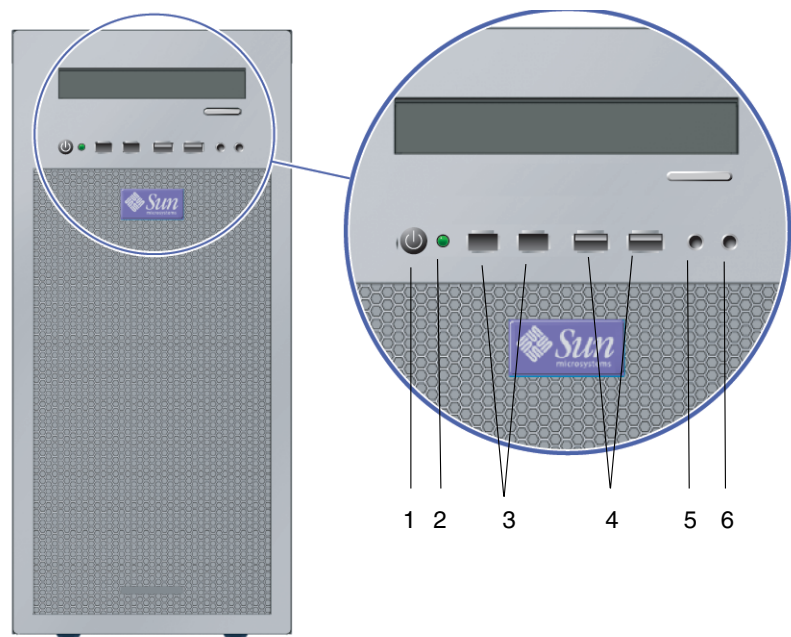
- Sun Ultra 20 Workstation
- Sun Ultra 20 Workstation Documentation, which includes the following:
  - *Sun Ultra 20 Workstation Setup Guide*
  - *Sun Ultra 20 Workstation Release Notes*
- Additional safety and license documentation
- Sun Ultra 20 Workstation Supplemental CD (includes drivers and diagnostics software)
- DMS-59 cable (if the workstation is configured with an NVS280 or NVS285 graphics card)
- Mouse (for some Sun Ultra 20 Workstation configurations)

An optional country accessory kit, which includes a power cable, keyboard, and a mouse, is packaged separately from the other items (if ordered).



**FIGURE 1-2** Sun Ultra 20 Workstation Kit Contents

# 1.3.1 Front Panel Overview

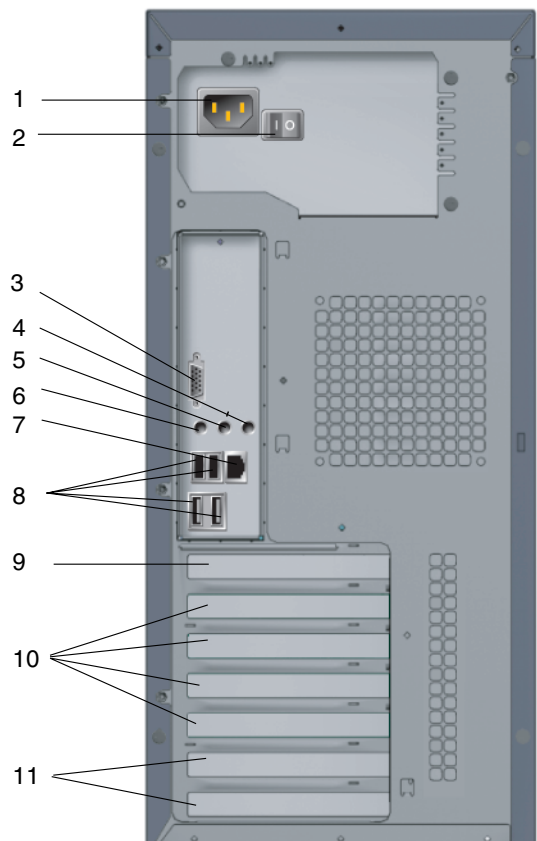


**FIGURE 1-3** Front Panel of the Sun Ultra 20 Workstation

**TABLE 1-1** Front Panel of the Sun Ultra 20 Workstation

Label	Button/LED/Port	Label	Button/LED/port
1	Power button	4	Two USB ports
2	Power LED	5	Microphone-in jack
3	Two 1394 (FireWire) ports	6	Headphone-out jack

# 1.3.2 Back Panel Overview



**FIGURE 1-4** Back Panel of the Sun Ultra 20 Workstation

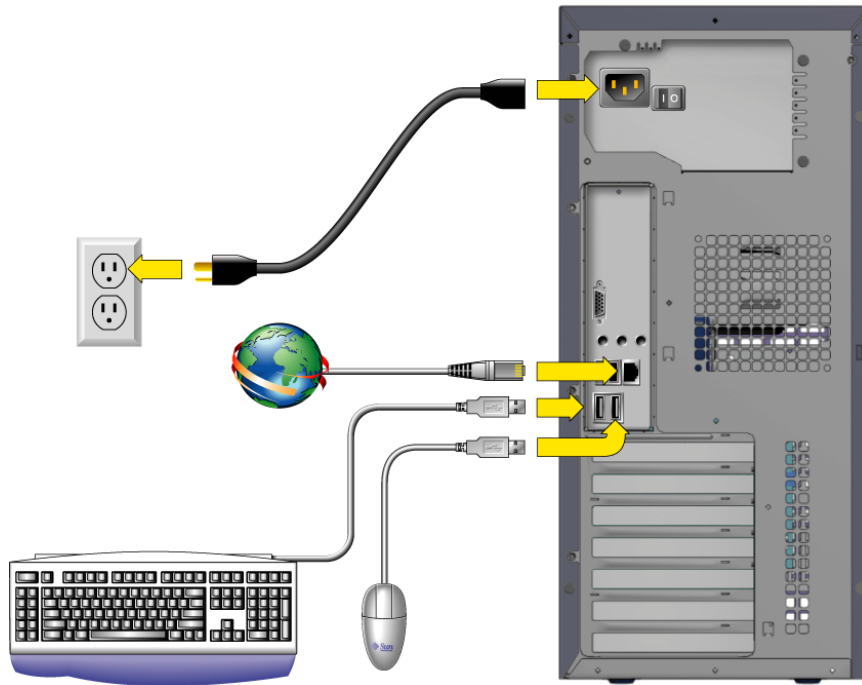
**TABLE 1-2** Back Panel of the Sun Ultra 20 Workstation

Label	Connector/Slot	Label	Connector/Slot
1	Power connector	7	Ethernet connector
2	Power switch	8	Four USB connectors
3	Onboard HDI15 video connector	9	PCI Express x16 graphics slot
4	Microphone jack	10	Four PCI slots
5	Line-in jack	11	Two PCI Express x1 slots
6	Line-out jack		

---

## 1.4 Cabling the Workstation

FIGURE 1-5 illustrates the cable connections for the workstation.



**FIGURE 1-5** Cable Connections

Connect the workstation and external devices in this order:

1. Connect the workstation power cord to a grounded electrical outlet.
2. Connect the keyboard and mouse to the USB connectors on the back panel.
3. Connect the Ethernet cable to the Ethernet connector on the Sun Ultra 20 Workstation, and connect the other end of the cable to an Ethernet RJ-45 jack.



4. Connect the monitor cable as follows:

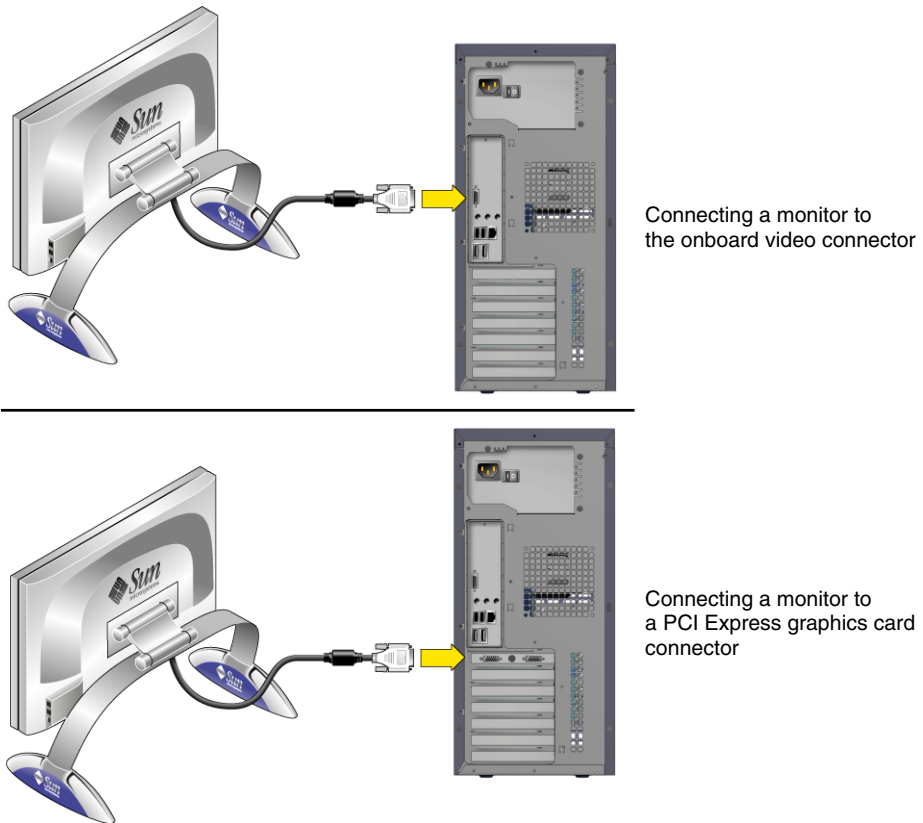
- If a PCI Express graphics card is not installed in the top PCI slot, connect the monitor to the onboard video connector. See the top of [FIGURE 1-6](#).
- If a PCI Express graphics card is installed in the top PCI slot, connect the monitor to the graphics card connector. See the bottom of [FIGURE 1-6](#).

Your graphics card may require a DVI cable to connect to your monitor. Systems with a NVS280 or NVS285 video card installed include a Dual DVI-I DMS-59 cable (both ends are digital); a VGA to DVI adapter is required to connect to analog monitors.

---

**Note** – The onboard video card is disabled by default when a graphics card is installed. To enable the onboard video card, follow the instructions in the *Sun Ultra 20 Workstation User Guide*, Appendix B.

---



**FIGURE 1-6** Connecting the Monitor

5. Connect any additional external devices to the workstation's other connectors.

---

## 1.5 Powering On the Workstation

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**Tip** – If you are installing optional internal components such as additional DIMMs, PCI cards, optical drives, or hard drives, install those components before you power on the workstation. If you are not installing optional components, you are ready to power on the workstation.

---

1. Turn on the power to the monitor and to all external devices.
2. Turn the power switch on the rear of the workstation to the On ( | ) position.
3. Press and release the workstation Power button on the front panel (see [FIGURE 1-3](#)).
4. After several seconds, verify that the platform power LED next to the Power button lights.  
The platform power LED on the Power button lights after the workstation begins the internal booting process (see [FIGURE 1-3](#)).
5. If you are powering on the workstation for the first time, install the operating system or configure the preinstalled operating system after the system is finished booting.
  - See [Chapter 2](#) for information about installing an operating system.
  - See [Chapter 3](#) for information about configuring the preinstalled Solaris 10 operating system.

---

## 1.6 Powering Off the Workstation

1. Save your data and close any open applications.
2. Read all of the following power-off options before powering off the workstation:

- Power off the workstation by using the operating system shutdown command or menu option.

In most cases, this powers down the operating system and then turns off the power to the workstation.

- If the workstation power is not shut off using the operating system command or this command is not available, press and release the power button (see [FIGURE 1-3](#) for location).

This initiates an orderly shutdown of the operating system and powers off the workstation.



---

**Caution** – To avoid data loss, use the preceding two options whenever possible.

---

- If the workstation is not shut off, press and hold the power button for approximately four seconds.

This shuts down the power to the workstation but does *not* initiate an orderly shutdown of the system. This method could result in data loss.

If the preceding options fail to power off the workstation, see “Troubleshooting” in the *Sun Ultra 20 Workstation User Guide*, 819-2146, for more options.

---

**Note** – After powering off the workstation, wait at least four seconds before powering on the workstation again.

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# Software Installation

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This chapter includes the following sections:

- [Section 2.1, “Preparing for Installation” on page 2-1](#)
- [Section 2.1.2, “Setting up the BIOS for Operating System Installation” on page 2-4](#)
- [Section 2.2, “Installing the Operating System” on page 2-5](#)
- [Section 2.3, “Running the up2date Utility” on page 2-6](#)
- [Section 2.4, “Installing Drivers and Mounting the Diagnostic Partition” on page 2-6](#)

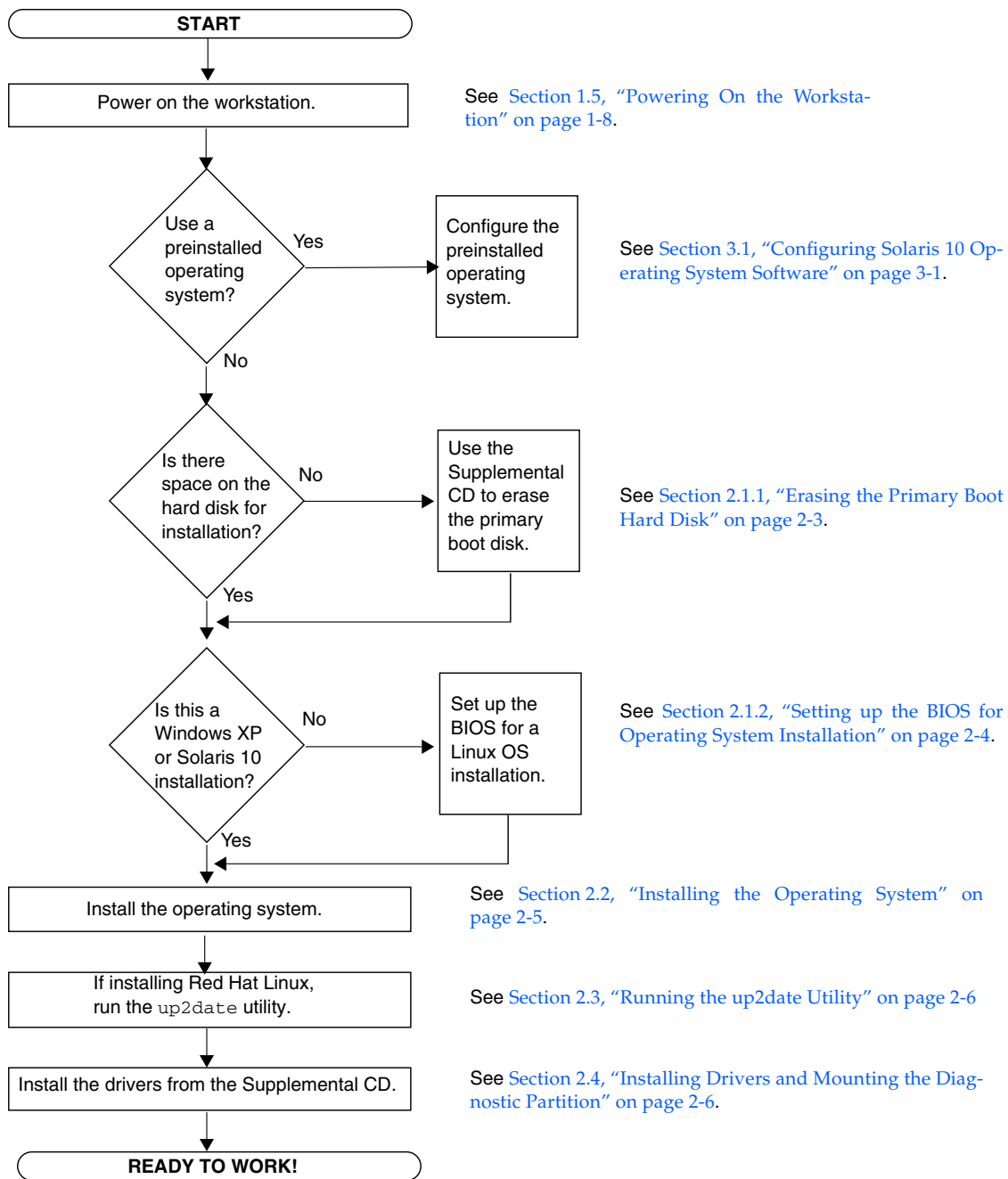
This chapter includes information about installing an operating system on your workstation, if you do not want to use the preinstalled Solaris 10 Operating System.

Diagnostics software is also included on the Sun Ultra 20 Workstation Supplemental CD. Instructions for using the diagnostics software are provided in the *Sun Ultra 20 Workstation User Guide*, 819-2146.

---

## 2.1 Preparing for Installation

[FIGURE 2-1](#) shows the process flow for installing an operating system on your workstation.



**FIGURE 2-1** Installation Flow Diagram

## 2.1.1 Erasing the Primary Boot Hard Disk

If you do not have enough space on the boot partition to install an operating system, the Erase Primary Boot Hard Disk option on the Sun Ultra 20 Workstation Supplemental CD main menu enables you to erase other installed operating systems to make room for the new installation.



---

**Caution** – Selecting the Erase Primary Boot Hard Disk option from the Supplemental CD erases all partitions on the hard drive, with the exception of the diagnostic partition. All user data is lost. Be sure to back up all data on the hard drive before performing this action.

---

To erase the primary boot hard disk:

1. **Back up all data that you want to save on the hard drive.**
2. **Insert the Supplemental CD into the workstation.**
3. **When the main menu appears, select the following option from the Supplemental CD main menu:**

3. Erase Primary Boot Hard Disk

This option erases all partitions currently located on the primary hard drive, except for the diagnostic partition. The diagnostic partition, if it is present, remains untouched.

## 2.1.2 Setting up the BIOS for Operating System Installation

If you plan to install an operating system onto the Sun Ultra 20 Workstation, you need to make sure that the BIOS is set up correctly before installing the software. See the section below that matches the operating system you plan to install.

### 2.1.2.1 Setting up the BIOS for Windows XP or Solaris 10

The default for the Installed O/S option is Others. If the default has not been changed, you do not need to perform this setup for Windows XP or Solaris 10 operating systems.

If the BIOS Installed O/S option has been changed from the default, do the following for Windows XP or Solaris 10 operating systems:

1. **Power on the workstation and press the F2 key at the Sun logo screen to enter the BIOS Setup menu.**
2. **Select the Advanced BIOS Features menu.**
3. **Change the Installed O/S option to Others.**
4. **Press the F10 key to save your changes and exit the BIOS.**

### 2.1.2.2 Setting up the BIOS for a Linux Operating System

For Linux operating systems (RedHat Enterprise Linux 3 and 4 and SUSE Linux Enterprise System SP1) do the following:

1. **Power on the workstation and press the F2 key at the Sun logo screen to enter the BIOS Setup menu.**
2. **Select the Advanced BIOS Features menu.**
3. **Change the Installed O/S option to Linux.**
4. **Press the F10 key to save your changes and exit the BIOS.**



---

## 2.2 Installing the Operating System

Your Sun Ultra 20 Workstation has the Solaris 10 Operating System preinstalled. You can also choose to install one of the supported operating systems (or later versions) for Sun Ultra 20 Workstation.

- Solaris 10 Operating System
- Red Hat Enterprise Linux 3 WS Update 5, 32-bit and 64-bit
- Red Hat Enterprise Linux 4 WS Update 1, 32-bit and 64-bit
- SUSE Linux Enterprise System 9 SP 1 32-bit and 64-bit
- Windows XP, 32-bit (SP2) and 64-bit (WHQL certified)

Refer to the following URL for information on the operating systems currently supported on the Sun Ultra 20 Workstation:

<http://www.sun.com/ultra20>

Instructions for installing these operating systems are provided in the Sun Ultra 20 Workstation documentation, available at the Sun website (see [“Related Documentation” on page ix](#)). Instructions for installing Windows XP using the Remote Installation Service (RIS) are provided in [Appendix A](#).

Note the following before installing a Linux or Windows XP operating system.

- If you are installing a Linux operating system, you will need to set the BIOS Installed O/S option. See [Section 2.1.2, “Setting up the BIOS for Operating System Installation” on page 2-4](#).
- If you are installing Windows XP and you plan to configure RAID on your workstation, you will need to install the RAID drivers in conjunction with installing Windows XP. See [Section 2.4.3, “Installing Windows XP Operating System Drivers” on page 2-10](#).

If you want to run Red Hat Enterprise Linux 3 or 4 WS or SUSE Linux Enterprise System on the Sun Ultra 20 Workstation, you can order the software from the following web site:

<http://wwws.sun.com/software/linux/index.html>

---

**Note** – The diagnostic partition is preinstalled on the Sun Ultra 20 Workstation. If the diagnostic partition has been removed from the workstation, refer to the *Sun Ultra 20 Workstation User Guide*, 819-2146, for information about how to reinstall the diagnostic partition from the Sun Ultra 20 Workstation Supplemental CD.

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## 2.3 Running the up2date Utility

If you are installing the Red Hat Enterprise Linux software, run the `up2date` utility *after* installing the operating system and *before* installing the video drivers from the Sun Ultra 20 Workstation Supplemental CD.

---

**Note** – If you have already installed the NVIDIA drivers, you must reinstall them after running `up2date`, because the kernel is updated.

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## 2.4 Installing Drivers and Mounting the Diagnostic Partition

After installing the operating system, run the installation script provided on the Sun Ultra 20 Workstation Supplemental CD to install the drivers that correspond to your operating system.

The Sun Ultra 20 Workstation Supplemental CD is included with your Sun Ultra 20 Workstation. You can also download the Supplemental CD from the downloads link at:

<http://www.sun.com/ultra20>

You also need to run this script to mount the diagnostic partition for all supported operating systems if you have created a new diagnostic partition. (See the *Sun Ultra 20 Workstation User Guide*, 819-2146, for information about how to create a diagnostic partition.) The diagnostic partition cannot be mounted on a Windows XP workstation.

This section covers the following topics:

- [Section 2.4.1, “Installing Linux Operating System Drivers” on page 2-7](#)
- [Section 2.4.2, “Installing Solaris Operating System Drivers” on page 2-9](#)
- [Section 2.4.3, “Installing Windows XP Operating System Drivers” on page 2-10](#)
- [Section 2.4.4, “Installing NVIDIA Display and Chipset Drivers for Windows XP” on page 2-14](#)

## 2.4.1 Installing Linux Operating System Drivers

The order of installation for Linux operating system and drivers is as follows:

1. Remove the preinstalled Solaris operating system from the server. See [Section 2.1.1, “Erasing the Primary Boot Hard Disk” on page 2-3](#).
2. If necessary, set up the BIOS for Linux operating system installation. See [Section 2.1.2, “Setting up the BIOS for Operating System Installation” on page 2-4](#).
3. Install the operating system.

---

**Note** – Make sure to keep the 55 MB diagnostic partition in place when doing the installation. If the diagnostic partition gets erased for some reason, use the Create Diagnostic Partition option in the Diagnostics section of the Sun Ultra 20 Workstation Supplemental CD. See the *Sun Ultra 20 Workstation User Guide* for more details.

---

4. If you have installed a Red Hat Linux operating system, run the `up2date` utility as shown in [Section 2.3, “Running the up2date Utility” on page 2-6](#).
5. Install the drivers as shown in the following procedure.

To install the video drivers and mount the diagnostic partition when running a Linux operating system:

1. **Log in to the Sun Ultra 20 Workstation as superuser.**
2. **Insert the Sun Ultra 20 Workstation Supplemental CD into the DVD drive and type:**

```
cd /mountpoint/drivers/linux/operating_system
```

Where `/mountpoint` is the directory the CD is mounted to and `operating_system` is the type of Linux installed on the workstation.

- If the directory does not exist, the CD did not automount. You will need to mount the CD and change to the correct directory as shown in [Step 3](#) and [Step 4](#).
- If you were able to access the `operating_system` directory, go to [Step 5](#).

3. If the CD does not automount, open a terminal window and mount the CD by typing the following command:

```
# mount -o ro /dev/cdrom /mountpoint
```

Where */mountpoint* is the appropriate mount point for the OS and optical drive type.  
For example:

```
# mount -o ro /dev/cdrom /mnt/dvdrom
```

4. Change to the */mountpoint/drivers/linux/operating\_system* directory.

Where */mountpoint* is the directory that the CD is mounted to and *operating\_system* is the type of Linux installed on the workstation.

For example:

```
# cd /mnt/dvdrom/drivers/linux/red_hat
```

5. Run the installation script by typing the following command:

```
# ./install.sh
```

This script does not execute if the X server is running.

- If the script exits and you receive an error message, go to [Step 6](#).
- If the script executes correctly, go to [Step 7](#).

6. If the script exits and you receive an error message, perform the following steps to disable the X server:

- a. Type the following at the system prompt:

```
% init 3
```

- b. Log in as superuser.

- c. Repeat [Step 4](#) and [Step 5](#).

7. Eject the CD after the driver installation is complete.

8. Reboot the workstation.

## 2.4.2 Installing Solaris Operating System Drivers

The following instructions are for installing drivers if you are performing a fresh installation of the Solaris 10 operating system. You do not need to reinstall the drivers if you are using the preinstalled version of the operating system.

1. Remove the currently installed operating system from the server. See [Section 2.1.1, “Erasing the Primary Boot Hard Disk” on page 2-3](#).
2. If necessary, set up the BIOS for Solaris operating system installation. See [Section 2.1.2, “Setting up the BIOS for Operating System Installation” on page 2-4](#).
3. Install the operating system. If you are using RIS to install Windows XP, refer to [Appendix A](#).
4. Install the drivers as shown in the following procedure.

To install the drivers and mount the diagnostic partition when running the Solaris 10 Operating System:

1. **Log in to the Sun Ultra 20 Workstation as superuser.**
2. **Insert the Sun Ultra 20 Workstation Supplemental CD into the DVD drive.**  
The CD is automounted by the Solaris 10 Operating System.
3. **Change to the `/cdrom/cdrom0/drivers/sx86` directory by typing the following command:**

```
# cd /cdrom/cdrom0/drivers/sx86
```

4. **Run the install script by typing the following command:**

```
# ./install.sh
```

The networking and sound drivers are now installed.

The script prompts the user to reboot the system for changes to take effect.

5. **Reboot the server.**
6. **When `xserver` choices are displayed, select the default `Xorg`.**
7. **When prompted for networking information on your system, enter the networking information for your server.**

## 2.4.3 Installing Windows XP Operating System Drivers

The Sun Ultra 20 Workstation Supplemental CD contains NVRAID, NVIDIA display, and NVIDIA chipset drivers for Windows XP. If you are installing NVRAID drivers, you will need to use the XpReburn script to create a new Windows XP CD containing the necessary drivers or create a boot diskette to install the drivers *before* installing the Windows XP operating system.

The order of Windows XP operating system and driver installation is as follows:

1. Remove the preinstalled Solaris operating system from the server. See [Section 2.1.1, “Erasing the Primary Boot Hard Disk” on page 2-3](#).
2. If necessary, set up the BIOS for the Windows 2003 Server operating system. See [Section 2.1.2, “Setting up the BIOS for Operating System Installation” on page 2-4](#).
3. If you plan to use the workstation RAID functionality, install the NVRAID drivers before installing the operating system by one of the following methods:
  - [Section 2.4.3.1, “Installing RAID Drivers Using XPREburn Script” on page 2-11](#).
  - [Section 2.4.3.2, “Installing RAID Drivers Using a Boot Diskette” on page 2-12](#)
4. Install the operating system. If you are using RIS to install Windows XP, see [Appendix A](#).

---

**Note** – Make sure to keep the 55 MB diagnostic partition in place when doing the installation. If the diagnostic partition gets erased for some reason, use the Create Diagnostic Partition option in the Diagnostics section of the Sun Ultra 20 Workstation Supplemental CD. See *the Sun Ultra 20 Workstation User Guide* for more details.

---

5. Install the display and chipset drivers as shown in [Section 2.4.4, “Installing NVIDIA Display and Chipset Drivers for Windows XP” on page 2-14](#).
6. If you are using the onboard ATI Rage XL PCI graphics controller, you need to install the ATI drivers.

Download the ATI drivers from the ATI web site at the following URL.

<http://support.ati.com/>

---

**Note** – The Supplemental CD does not mount the diagnostic partition under Windows XP.

---

### 2.4.3.1 Installing RAID Drivers Using XpReburn Script

The Sun Ultra 20 Workstation Supplemental CD (705-1364) contains a script that allows you to create a new Windows XP CD with the needed RAID drivers. After the new CD is created, you can boot the CD and install Windows XP normally. This new CD automatically installs the drivers, making it unnecessary to use a USB diskette drive and to install the NVRAID drivers.

For specific and current information on the XpReburn script, see the description at the top of the script which is located in `/drivers/utilities/XpReburn` on Supplemental CD (705-1364-10) or later.

To install Windows XP using a RAID configuration, you need the following:

- A system running Solaris Operating System for x86 Systems, Solaris Operating System (SPARC® Platform Edition), Red Hat Enterprise Linux 3 or 4, or SUSE Linux Enterprise System (SLES) 9
- Access to a CD burner
- A blank CD-R or CD-RW
- A Windows XP Professional CD (retail media only—not an OEM version)
- A Sun Ultra 20 Workstation Supplemental CD

To create a Windows XP CD with the Sun Ultra 20 Workstation drivers:

1. **On a Solaris x86, Solaris OS (SPARC Platform Edition), or Red Hat Enterprise Linux 3 or 4, or SLES 9 system, insert the Sun Ultra 20 Workstation Supplemental CD.**
2. **As superuser, create a temporary directory with at least 1.2 GB of space. For example:**

```
# mkdir /files
```

3. **Copy the `XpReburn_version.zip` file to that directory.**

Where *version* is the current version of XpReburn.

For example:

```
# cp /drivers/utilities/XpReburn_1.0.zip /files
```

4. **Eject the Supplemental CD and insert your retail Windows XP 32 Professional CD.**

5. **Unzip the `XpReburn_version.zip` file. For example:**

```
# unzip -q XpReburn_1.0.zip
```

6. **Run the `XpReburn` script. For example:**

```
# ./files/XpReburn
```

The script displays the driver files it expects to be located in the current directory. When all four driver files are downloaded into that directory, the script creates a new ISO image and then automatically burns that ISO image onto a CD if the system has a CD burner.

7. **After the CD is created, install Windows XP Professional on the Sun Ultra 20 Workstation.**

8. **After the OS installation is complete, install the NVIDIA display drivers as shown in [Section 2.4.4, “Installing NVIDIA Display and Chipset Drivers for Windows XP”](#) on page 2-14.**

### 2.4.3.2 Installing RAID Drivers Using a Boot Diskette

This section explains how to create a boot diskette for the NVIDIA RAID drivers using the Sun Ultra 20 Workstation Supplemental CD, and how to install the drivers onto your workstation.

To install the NVIDIA RAID drivers using a boot diskette, you will need the following:

- A Windows system with a CD and diskette drive
- A blank diskette
- A Sun Ultra 20 Workstation Supplemental CD
- A USB floppy drive
- A Windows XP Professional CD (retail media only—not an OEM version)

This section contains the following subsections:

- [“Creating a Boot Diskette for NVIDIA RAID Drivers”](#) on page 13
- [“Configuring RAID in the BIOS”](#) on page 13
- [“Installing Windows XP and NVIDIA RAID Drivers”](#) on page 14



## *Creating a Boot Diskette for NVIDIA RAID Drivers*

To create a boot diskette for Windows XP 32-bit and 64-bit, you will need a Windows system with a CD drive and diskette drive.

- 1. On a Windows workstation, insert the Sun Ultra 20 Workstation Supplemental CD.**
- 2. Change to the following directory on the CD:**  
`d:\drivers\windows\OS\chipset`  
Where *OS* is XP32 or XP64.
- 3. Unzip the NForce\_xxx\_wxp.zip file and extract the files to a local directory (for example C:\raid).**
- 4. Insert a blank diskette into the workstation.**
- 5. Change to the directory where the files were extracted (for example, C:\raid) and open the to the IDE\WinXP\sataraid directory.**
- 6. Select all files in the directory and copy them to the diskette drive (a:).**

## *Configuring RAID in the BIOS*

To configure RAID in the Sun Ultra 20 Workstation BIOS and RAID BIOS on the Sun Ultra 20 Workstation:

- 1. Configure RAID in the Sun Ultra 20 Workstation BIOS.**
  - a. Reboot the workstation and press the F2 key at the Sun logo screen.**  
The BIOS Setup screen displays.
  - b. Select Integrated Peripherals from the main menu.**
  - c. Select RAID config.**
  - d. Under RAID, change the setting to Enable.**
  - e. Press the F10 key to save your change and exit.**
- 2. Configure RAID in the NVRAID BIOS.**
  - a. Press the F10 key to enter the NVRAID BIOS.**
  - b. Select 0 or 1 to create a RAID array.**
  - c. Exit the BIOS.**

## *Installing Windows XP and NVIDIA RAID Drivers*

To install Windows XP with the NVIDIA RAID drivers on the Sun Ultra 20 Workstation:

1. Attach a USB floppy diskette drive to the workstation.
2. Insert a Windows XP 32-bit or 64-bit installation CD into the DVD drive.
3. Press the F6 key to install the third-party RAID driver.
4. Press the S key and Enter to specify additional drivers, then insert the diskette.
5. Select the NVIDIA NForce Storage Controller.
6. Press the S key and Enter to specify additional drivers.
7. Select the NVIDIA RAID CLASS DRIVER.
8. Press the Enter key to continue the Windows XP installation.
9. After the OS installation is complete, install the NVIDIA display and chipset drivers as shown in [Section 2.4.4, "Installing NVIDIA Display and Chipset Drivers for Windows XP"](#) on page 2-14.

### 2.4.4 Installing NVIDIA Display and Chipset Drivers for Windows XP

---

**Note** – If you have created a Windows XP CD containing NVRAID drivers using the XpReburn option, you do not need to install the chipset drivers, only the display drivers.

---

To install the NVIDIA display and chipset drivers after installing Windows XP, do the following:

1. Insert the Sun Ultra 20 Workstation Supplemental CD into the DVD drive.
2. (If necessary) Follow these steps to install the chipset drivers:
  - a. Change the directory on the Supplemental CD by typing the following command:

```
C:\> cd/D D:\drivers\windows\OS\chipset
```

Where OS is XP32 or XP64.

- b. Double-click the executable file.
  - c. Follow the instructions in the installation software.
3. Do the following steps to install the display drivers:
- a. Change to the directory on the Supplemental CD by typing the following command:

```
C:\> cd/D D:\drivers\windows\OS\video
```

Where *OS* is XP32 or XP64.

- b. Double-click the executable file.
  - c. Follow the instructions in the installation software.
4. Reboot the workstation.



## Setting Up the Preinstalled Software

---

The Solaris 10 Operating System and additional development software are preinstalled on all Sun Ultra 20 Workstations. This chapter contains instructions on configuring the operating system and using the software installed on the system.

This chapter contains the following sections:

- [Section 3.1, “Configuring Solaris 10 Operating System Software” on page 3-1](#)
- [Section 3.2, “Setting Up Preinstalled Development Software” on page 3-5](#)
- [Section 3.3, “Restoring and Backing Up Preinstalled Software” on page 3-7](#)

---

### 3.1 Configuring Solaris 10 Operating System Software

The following topics are covered in this section:

- [Section 3.1.1, “Licensing Information” on page 3-2](#)
- [Section 3.1.2, “Disk Configuration” on page 3-2](#)
- [Section 3.1.3, “Installation Flowchart” on page 3-2](#)
- [Section 3.1.4, “Configuring the Preinstalled Solaris 10 Operating System” on page 3-3](#)

## 3.1.1 Licensing Information

The Solaris 10 Operating System installed on your workstation requires no licensing fee. The Sun Ultra 20 Workstation requires Solaris 10, HW 1 or a subsequent compatible version of Solaris software. For more information, refer to the following web site:

<http://www.sun.com/software/solaris/licensing/index.html>

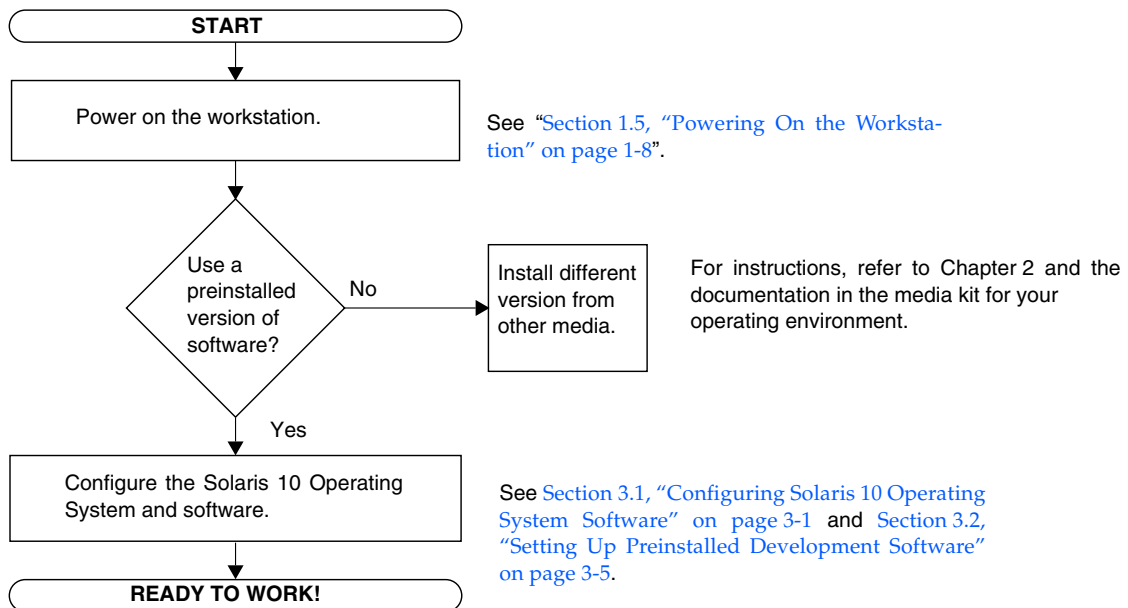
## 3.1.2 Disk Configuration

The exact configuration that has been preinstalled is as follows:

- Hard drive `root` partition—14.0 Gbytes
- Hard drive `swap` partition—2.0 Gbytes
- Hard drive `var` partition—6.0 Gbytes
- Hard drive `export` partition—remainder of the disk

## 3.1.3 Installation Flowchart

Use the flowchart in [FIGURE 3-1](#) to assist with setting up your operating environment.



**FIGURE 3-1** Installation Flow Diagram

## 3.1.4 Configuring the Preinstalled Solaris 10 Operating System

Complete the following steps to configure the preinstalled Solaris 10 x86 Platform Edition.

1. **Power on the workstation.**

See [Section 1.5, “Powering On the Workstation”](#) on page 1-8.

2. **Answer the setup prompts by following the on-screen instructions.**

Use a copy of [TABLE 3-1](#) to write down the information that you might need to collect before setting up the Solaris 10 Operating System.

To help you fill out the information in the table, your system administrator (SA) should provide you with information specific to your site before you begin. Check with your SA about whether some of the information is available on your network.

---

**Note** – When you originally configure your system, under Xserver Selection, you will be given a choice of Xorg server or Xsun server. Chose Xorg server.

---

3. **When you have finished with the configuration, the workstation reboots.**

The workstation displays the login window, in which you can enter your user name and password to log in and begin using the workstation.

4. **Review the *Solaris 10 Operating System Release Notes* for any late-breaking information about your preinstalled software.**

The *Solaris 10 Operating System Release Notes* documentation can be found at:  
<http://docs.sun.com>

**TABLE 3-1** Information for Preinstalled Solaris 10 Configuration

Setup Window	Explanation and Notes	Your Information
Select Language and Locale	Native language and locale to use for the workstation.	
Host Name	A name to give the workstation.	
Terminal Type	Type of terminal to use on the workstation.	
Network Connectivity	Network or stand-alone workstation protocols. A system administrator might be required to complete this section.	
(IP Address)	<b>Note:</b> Depending on how you answer and what information is provided by your network, you might also be prompted for the workstation’s IP address.	

**TABLE 3-1** Information for Preinstalled Solaris 10 Configuration *(Continued)*

Setup Window	Explanation and Notes	Your Information
IPv6	Option to enable IPv6 on the workstation.	
Security Settings	Security settings and protocols.	
Name Service	Name service to use: NIS+, NIS, DNS, LDAP, or None.  <b>Note:</b> This window is not displayed if the workstation is not connected to a network.	
Domain Name	NIS or NIS+ domain for this workstation.  <b>Note:</b> This window is not displayed if the workstation is not using the NIS or NIS+ service.	
Name Server/ Subnet/ Subnet Mask	Name server (specify the server or have the workstation find one on a local subnet).  <b>Note:</b> This window is not displayed if the workstation is not connected to a network. <b>Note:</b> Depending on how you answer and what information is provided by your network, you might also be prompted for: <ul style="list-style-type: none"><li>• The subnet for the workstation</li><li>• The subnet mask for the workstation</li></ul>	
Time Zone	Local time zone (select by geographic region, GMT offset, or a time zone file).	
Date and Time	Current date and time (accept the default or enter the current date and time).	
Root Password	Root (superuser) password for the workstation.	
Proxy Server Configuration	Workstation connection: direct to the Internet or through a proxy server.	



---

## 3.2 Setting Up Preinstalled Development Software

The following minimum versions of development software is preinstalled or preloaded on your Sun Ultra 20 Workstation: Sun Studio 10, Sun Java Studio Creator 2004Q2 and Sun Java Studio Enterprise 7. Your system might have later versions of this software preinstalled. Workstations shipped after January 2006, also have the NetBeans IDE installed.

- [Section 3.2.1, “Sun Studio Software” on page 3-5](#)
- [Section 3.2.2, “Sun Java Studio Creator” on page 3-6](#)
- [Section 3.2.3, “Sun Java Studio Enterprise” on page 3-6](#)
- [Section 3.2.4, “NetBeans IDE” on page 3-7](#)

### 3.2.1 Sun Studio Software

Sun Studio software provides a comprehensive, productive environment for developing reliable, scalable, high-performance applications using C, C++, and Fortran for the Solaris Operating System. The software package includes compilers, performance analysis tools, and a powerful debugger, as well as an integrated development environment (IDE).

The Sun Studio IDE provides modules for creating, editing, building, debugging, and analyzing the performance of a C, C++, or Fortran application. It includes a set of basic Java™ language support modules that can be enabled if needed for JNI (Java Native Interface) development.

The Sun Studio software consists of two major components:

- The Sun Studio component, which includes the IDE, compilers, tools, and core platform
- The Java 2 Platform, Standard Edition (J2SE) technology on which the core platform runs

More information on the Sun Studio software is available from the Sun Studio documentation is available at:

<http://developers.sun.com/sunstudio>

## 3.2.2 Sun Java Studio Creator

The Sun Java Studio Creator development environment (formerly "Project Rave") is the next-generation tool for Java application development. This product combines the power of 100% Java standards with simplified visual development techniques to give developers the most effective, most productive way to build applications in Java.

The Java Studio Creator environment has been designed and tested to meet the needs of skilled developers whose primary concern is rapid turnaround of business-critical applications. Java Studio Creator lets these developers leverage the power of the Java platform to solve business problems, without bogging them down in plumbing or forcing them to give up the highly-productive visual style they're used to.

Additional information about Sun Java Studio Creator can be found in the product documentation at:

<http://developers.sun.com/jscreator>

## 3.2.3 Sun Java Studio Enterprise

Sun Java Studio Enterprise is a complete, cost-effective, unified platform of tools, support and services designed to fully integrate with the capabilities of the Sun Java Enterprise System. Java Studio Enterprise enables you to develop applications in an environment carefully designed to improve productivity while simplifying the creation of sophisticated network applications ready to be deployed on the Java Enterprise System.

Additional information about Sun Java Studio Enterprise can be found in the product documentation at:

<http://developers.sun.com/jsenterprise>

## 3.2.4 NetBeans IDE

The NetBeans IDE includes Java 2 Platform, Enterprise Edition (J2EE) development capabilities. This new release allows developers to not only develop applications in the web tier but also includes Enterprise JavaBeans (EJBs) and web service development capabilities. The NetBeans IDE is a single platform with out-of-the-box development capabilities and support for enterprise (J2EE 1.4) applications and web services, mobile/wireless Java 2 Platform, Micro Edition (J2ME) applications and services and desktop Java 2 Platform, Standard Edition (J2SE) applications. The robust open source Java IDE, has everything that Java Software Developers need to develop cross-platform desktop, web and mobile applications straight out of the box.

See the following web site for more information on the NetBeans IDE:

<http://www.netbeans.org>

---

## 3.3 Restoring and Backing Up Preinstalled Software

### 3.3.1 Restoring Preinstalled Software

---

**Tip** – All Solaris 10 and Java Desktop System (JDS) components are available through download of the Solaris 10 Operating System or through the Solaris 10 media kit. For information about obtaining Solaris 10 and JDS components see:

<http://www.sun.com/solaris/>

---

Your workstation comes preconfigured with the Solaris 10 Operating System and other preinstalled software. However, if you replace your hard drive for any reason, the replacement drive does not come preconfigured with the Solaris 10 Operating System and other preinstalled software.

You should make and keep a full backup of the operating system, which can be used to restore your system if it is ever needed. Instructions for backing up your Operating System are included in the *Solaris 10 System Administration Collection*. For information about the *Solaris 10 System Administration Collection* see:

<http://docs.sun.com/>

You can also restore some of the software that is preinstalled on your hard disk image (HDI) from the CD-ROMs included in the appropriate version of the Solaris Media Kit. The Solaris Media Kit contains some of the same software that is preinstalled on your workstation. To reinstall some software, you might need to download the software from the web sites provided throughout this document. Some software product companies, such as Mozilla™, offer different versions of software on their respective web sites.

### 3.3.2 Restoring Solaris Preinstalled Software

---

**Note** – You must use Solaris 10 Operating System HW 1/06 or a subsequent compatible version on the Sun Ultra 20 Workstation.

---

#### 1. Get the Solaris Media Kit for your workstation.

You might already have the Solaris Media Kit if you ordered it with your workstation. If you did not order the kit with your system, contact your Sun sales representative and order the Solaris Media Kit for your language and Solaris version. For more information, refer to the following web site:

<http://www.sun.com/software/>

#### 2. Follow the installation instructions in the *Start Here* document that comes with the kit.

You can install the Solaris Operating System and as much of the additional software as you want.

More patch information is available at this web site. You can also download patches from this web site:

<http://sunsolve.sun.com/>

### 3.3.3 Reinstalling Other Software

If you must reinstall other software packages, be sure that you have the latest software version. For more information on the latest software versions, refer to the web sites listed throughout this guide.

### 3.3.4 Backing Up the Preinstalled Image to Another Hard Drive

Information about hard drive backups can be found in the *Solaris 10 System Administration Guide*. To obtain this guide, refer to the following web site:

<http://docs.sun.com/>

### 3.3.5 Hard Drive Mirroring

To perform hard drive mirroring using the Solaris 10 operating environment use Solaris Volume Manager.

For information about Solaris Volume Manager, see the *Solaris Volume Manager Administration Guide* at:

<http://www.sun.com/documentation/>



# Creating Windows Images on a RIS Server and Installing RIS Images

---

This appendix describes how to create Sun Ultra 20 Workstation specific images on the Remote Installation Service (RIS) server for the following operating systems:

- Windows XP SP2 32-bit
- Windows XP 64-bit

Once created you can install the images on a client workstation.

This appendix contains the following sections:

[Appendix A.1, Creating a 32-bit Windows XP \(Service Pack 2\) RIS Image](#)

[Appendix A.2, Creating a 64-bit Windows XP RIS Image](#)

[Appendix A.3, Installing a RIS Image onto a Client Workstation](#)

---

## A.1 Creating a 32-bit Windows XP (Service Pack 2) RIS Image

This section tells you how to create a Windows XP 32-bit image on a RIS server and then add platform specific drivers to the image. All drivers for this procedure are located on the Supplemental CD, version 1.3 or later.

---

**Note** – Before using this procedure, you must install the RIS onto a Windows 2003 server. See the following URL for complete instructions on how to install the RIS.

<http://support.microsoft.com/default.aspx?scid=kb;en-us;325862>

---

### A.1.1 Creating the Windows XP SP2 32-bit Image on the RIS Server

To copy Windows XP SP2 32-bit onto the RIS server, do the following steps. Click Next or Finished in each screen to advance to the next screen.

1. Insert the Windows XP SP2 32-bit CD into the RIS server's CDROM drive.
2. In the Start menu, select Run.
3. To start the RIS setup program, type the following command:

```
c:\ risetup.exe
```

---

**Note** – In all commands, c : \ is shown as the DOS command prompt.

---

4. In the “Welcome to the Remote Installation Services Setup Wizard” screen, click Next.
5. In the “Remote Installation Services Options” screen, choose “Add a new OS image to this remote installation server”.
6. In the Installation Source Files Location screen, choose the CDROM drive with the Windows XP SP2 32-bit CD.



7. In the “Windows Installation Image Folder Name” screen, type a descriptive name for the Windows XP SP2 32-bit CD image you are creating. For example:

```
Ultra_20_Windows_XP_SP2_32-bit
```

8. In the “Friendly Description and Help Text” screen, type a description and help text (for future end-user reference).
9. In the “Previous Client Installation Screens Found” screen, choose “Use the old client installation screens”.
10. In the “Review Settings” screen, verify your settings.
11. After the image installs to the server, click Done.

## A.1.2 Adding the NVIDIA Ethernet Drivers to the Windows Image

To add the NVIDIA Ethernet drivers to the Windows XP SP2 32-bit CD image on the RIS server, do the following steps.

1. Insert the Supplemental CD into the RIS server’s CDROM drive.
2. Type the commands below to accomplish the following actions:
  - Copy the Windows XP SP2 32-bit RIS NVIDIA Ethernet driver zip package to the RIS server.
  - Unzip the Ethernet driver zip package.
  - Copy the files to the Windows XP image.

```
c:\ copy cdrom_drive:\drivers\windows\RIS\XP32\NVRISWXP.ZIP C:\temp\  
c:\ unzip c:\temp\nvrismxp.zip -d c:\temp\nvrismxp  
c:\ copy c:\temp\nvrismxp\*. * ris_partition:\RemoteInstall\Setup\English\Images\  
image_dir\i386
```

Where *cdrom\_drive* is the CDROM drive on the RIS server, *image\_dir* is the image directory, and *ris\_partition* is the drive where the RIS image is stored on the RIS server.

## A.1.3 Adding Other Drivers and Modifying Setting Files

To modify settings files, create driver directories, and copy drivers to their directories in the Windows XP SP2 32-bit image on the RIS server, do the following steps.

The `ristndrd.sif` file is located in the following directory on the RIS server:

`ris_partition:\RemoteInstall\Setup\English\Images\image_dir\i386\templates`

### 1. Change these entries in the `ristndrd.sif` file to read as follows:

```
[Unattended]
    OemPreinstall = yes
[GuiUnattended]
    AdminPassword = "desired password"
```

### 2. Remove the following entry from the `ristndrd.sif` file:

```
[Identification]
    JoinDomain = %MACHINEDOMAIN%
    DoOldStyleDomainJoin = Yes
```

**3. Add the following entries to the `ristndrd.sif` file:**

```
[Unattended]
    DriverSigningPolicy = Ignore
    OemPnPDriversPath = "\drivers\audio;\drivers\nic;\drivers\sata_ide;\
drivers\smbus"

[MassStorageDrivers]
    "Nvidia RAID CLASS DRIVER (required)"="OEM"
    "Nvidia nForce Storage Controller (required)"="OEM"

[OEMBootFiles]
    nvatabus.sys
    nvraid.cat
    nvraid.inf
    nvraid.sys
    txtsetup.oem

[UserData]
    ProductKey = XXXXX-XXXXX-XXXXX-XXXXX-XXXXX

[Identification]
    JoinWorkgroup = WORKGROUP
```

**4. To create the `$oem$` directory for the RIS image, type the following command:**

```
c:\ mkdir ris_partition:\RemoteInstall\Setup\English\Images\image_dir
```

The `$oem$` directory will have a subdirectory tree structure with the following directory names:

```
textmode
$1
    drivers
        audio
        nic
        sata_ide
        smb
    $$
    OemDir
```

**5. To copy Windows XP 32-bit driver files from the Supplemental CD to the `$oem$` directory tree, type the following commands.**

The drivers are located in the following directory on Supplemental CD.

*cdrom\_drive*:\drivers\windows\xp32\chipset\

- a. To copy the chipset zip package to the RIS server, type the following command:

```
c:\ copy cdrom_drive:\drivers\windows\xp32\chipset\*.zip c:\temp
```

- b. To unzip the package, type the following command:

```
c:\ unzip c:\temp\nfref_670_w2kxp.zip c:\temp\nfref_670_w2kxp
```

6. To copy the chipset drivers to the proper directories, type the following commands:

```
c:\ copy c:\temp\nfref_670_w2kxp\ide\winxp\sataraid\*.dll ris_partition:\remoteinstall\
setup\english\images\image_dir\%oem%\$OemDir

c:\ copy c:\temp\nfref_670_w2kxp\ide\winxp\sataraid\* ris_partition:\remoteinstall\
setup\english\images\image_dir\%oem%\textmode

c:\ copy c:\temp\nfref_670_w2kxp\ide\winxp\sata_ide\* ris_partition:\remoteinstall\
setup\english\images\image_dir\%oem%\$1\drivers\sata_ide

c:\ copy c:\temp\nfref_670_w2kxp\ethernet\* ris_partition:\remoteinstall\setup\english\
images\image_dir\%oem%\$1\drivers\nic

c:\ copy c:\temp\nfref_670_w2kxp\audiodrv\* ris_partition:\remoteinstall\setup\english\
images\image_dir\%oem%\$1\drivers\audio

c:\ copy c:\temp\nfref_670_w2kxp\smbus\* ris_partition:\remoteinstall\setup\english\
images\image_dir\%oem%\$1\drivers\smbus\
```

7. The txtsetup.oem file is located in the following directory.

```
ris_partition:\RemoteInstall\Setup\English\Images\image_dir\%oem%\
textmode\
```

Add a semicolon to the beginning of each line for files that are of type \*.dll in the [Files.scsi.RAIDCLASS] and [Files.scsi.BUSDRV] sections.

8. To enable the RIS server to distribute the RIS image you created, type the following commands:

```
c:\ net Stop binlsvc
c:\ net Start binlsvc
```

---

## A.2 Creating a 64-bit Windows XP RIS Image

This section tells you how to create a Windows XP 64-bit image on a RIS server and then add platform specific drivers to the image. All drivers for this procedure located on the Supplemental CD, version 1.3 or later.

---

**Note** – Before using this procedure, you must install RIS onto a Windows 2003 server. See the following URL for complete instructions on how to install the RIS.

<http://support.microsoft.com/default.aspx?scid=kb;en-us;325862>

---

### A.2.1 Installing Windows XP 64-bit onto the RIS Server

To copy the Windows XP 64-bit CD onto the RIS server, do the following steps. Click Next or Finished in each screen to advance to the next screen.

1. Insert the Windows XP 64-bit CD into the RIS server's CDROM drive.
2. In the Start menu, select Run.
3. To start the RIS setup program, type the following command:

`c:\ risetup.exe`

---

**Note** – In all commands, `c:\` is shown as the DOS command prompt.

---

4. In the “Welcome to the Remote Installation Services Setup Wizard” screen, click Next.
5. In the “Remote Installation Services Options” screen, choose “Add a new OS image to this remote installation server”.
6. In the “Installation Source Files Location” screen, choose the CDROM drive with the Windows XP 64-bit CD.
7. In the “Windows Installation Image Folder Name” screen, type a descriptive name for the Windows XP 64-bit CD image you are creating. For example:

`Ultra_20_Windows_XP_64-bit`

8. In the “Friendly Description and Help Text” screen, type a description and help text (for future end-user reference).
9. In the “Previous Client Installation Screens Found” screen, choose “Use the new client installation screens, and overwrite the old ones”.
10. In the “Review Settings” screen, verify your settings.
11. After the image installs to the server, click Done.

## A.2.2 Adding the NVIDIA Ethernet Drivers to the Windows Image

To add the NVIDIA Ethernet drivers to the Windows XP 64-bit CD image on the RIS server, do the following steps.

1. Insert the Supplemental CD into the RIS server’s CDROM drive.
2. Type the commands below to accomplish the following actions.
  - Copy the Windows XP 64-bit RIS NVIDIA Ethernet driver zip package to the RIS server.
  - Unzip the Ethernet driver zip package.
  - Copy the files to the RIS image.

```
c:\ copy cdrom_drive:\drivers\windows\RIS\XP64\NVRISW64.ZIP C:\temp\  
c:\ unzip c:\temp\NVRISW64.zip -d c:\temp\NVRISW64  
c:\ copy c:\temp\NVRISW64\*. * ris_partition:\RemoteInstall\Setup\English\Images\  
image_dir\amd64
```

Where *cdrom\_drive* is the CDROM drive on the RIS server, *image\_dir* is the image directory, and *ris\_partition* is the drive where the RIS image is stored on the RIS server.

## A.2.3 Adding Other Drivers and Modifying Setting Files

To modify settings files, create driver directories, and copy drivers to their directories in the Windows XP 64-bit image on the RIS server, do the following steps.

The *ristndrd.sif* file is located in the following directory on the RIS server:

```
ris_partition:\RemoteInstall\Setup\English\Images\image_dir\i386\  
templates
```

**1. Change these entries in the `ristndrd.sif` file to read as follows:**

```
[Unattended]
    OemPreinstall = yes
[GuiUnattended]
    AdminPassword = "<desired password>"
```

**2. Remove the following entry from the `ristndrd.sif` file:**

```
[Identification]
    JoinDomain = %MACHINEDOMAIN%
    DoOldStyleDomainJoin = Yes
```

**3. Add the following entries to the `ristndrd.sif` file:**

```
[Unattended]
    DriverSigningPolicy = Ignore
    OemPnPDriversPath = "\drivers\audio;\drivers\nic;\drivers\sata_ide;\
drivers\smbus"

[MassStorageDrivers]
    "Nvidia RAID CLASS DRIVER (required)"="OEM"
    "Nvidia nForce Storage Controller (required)"="OEM"

[OEMBootFiles]
    nvatax64.sys
    nvraid.cat
    nvrpx64.inf
    nvrpx64.sys
    txtsetup.oem

[UserData]
    ProductKey = XXXXX-XXXXX-XXXXX-XXXXX-XXXXX

[Identification]
    JoinWorkgroup = WORKGROUP
```

**4. To create the `$oem$` directory for the RIS image, type the following command:**

```
c:\ mkdir cdrom_drive:\RemoteInstall\Setup\English\Images\image_dir
```

The \$oem\$ directory will have a subdirectory tree structure with the following directory names:

```
textmode
$1
  drivers
    audio
    nic
    sata_ide
    smbush
$$
  OemDir
```

5. To copy Windows XP 64-bit driver files into the \$oem\$ directory tree, type the following commands.

The drivers are located in the following directory on the Supplemental CD:

*cdrom\_drive*: \drivers\windows\xp64\chipset\

- a. To copy the zip package to the RIS server, type the following command:

```
c:\ copy cdrom_drive:\drivers\windows\xp64\chipset\*.zip c:\temp
```

- b. To unzip the package, type the following command:

```
c:\ unzip c:\temp\ck804_669_xp64.zip c:\temp\ck804_669_xp64
```



6. To copy the driver files to the proper directories, type the following commands:

```
c:\ copy c:\temp\ck804_669_xp64\ide\winxp\sataraid\*.dll ris_partition:\remoteinstall\
setup\english\images\image_dir\%oem%\$1\OemDir

c:\ copy c:\temp\ck804_669_xp64\ide\winxp\sataraid\* ris_partition:\remoteinstall\
setup\english\images\image_dir\%oem%\textmode

c:\ copy c:\temp\ck804_669_xp64\ide\winxp\sata_ide\* ris_partition:\remoteinstall\
setup\english\images\image_dir\%oem%\$1\drivers\sata_ide

c:\ copy c:\temp\ck804_669_xp64\ethernet\* ris_partition:\remoteinstall\setup\english\
images\image_dir\%oem%\$1\drivers\nic

c:\ copy c:\temp\ck804_669_xp64\audiodrv\* ris_partition:\remoteinstall\setup\english\
images\image_dir\%oem%\$1\drivers\audio

c:\ copy c:\temp\ck804_669_xp64\smbus\* ris_partition:\remoteinstall\setup\english\
images\image_dir\%oem%\$1\drivers\smbus\
```

7. The txtsetup.oem file is located in the following directory.

```
ris_partition:\RemoteInstall\Setup\English\Images\image_dir\%oem%\
textmode\
```

Add a semicolon to the beginning of each line for files that are of type \*.dll in the [Files.scsi.RAIDCLASS] and [Files.scsi.BUSDRV] sections.

8. To enable the RIS server to distribute the RIS image you created, type the following commands:

```
c:\ net Stop binlsvc
c:\ net Start binlsvc
```

---

## A.3 Installing a RIS Image onto a Client Workstation

This section tells you how to install a RIS image onto a client workstation using PXE boot.

1. **Either power on or reboot the workstation.**
2. During POST, press the F12 key to enter PXE.  
The workstation looks for the RIS server on the network.
3. **Type your name and password when the Windows RIS install screen appears.**
4. **Choose the RIS image to install.**

Once selected, the OS installation begins and automatically continues until it completes.